



On-Farm Biogas for In-City Combined Heat, Power & Transportation

AgStar Northwest Dairy Digester Workshop
Sunnyside, Washington
November 18, 2008



RealEnergy has developed, built, owned and operated more clean onsite power plants than any independent power producer North America.

- 43 Electrical Interconnections To-Date
 - Reciprocating Gas Engines, Solar PV, MicroTurbines, Absorption Chillers, Microgrids
 - Developing First BioGas Plants to Fix Long Term Gas Cost for its Fleet
-
- In-City Site Leases – Commodity Energy Sale Agreements
 - On-Farm Site Leases – Biomass and Sorghum Supply
 - No Cost or Operating Risk to Host Farm or Energy User
 - Clean Power Priced at or Below Your Best Grid Price



RealEnergy Developments



**State of California
San Francisco**



Arden Realty, San Diego, CA



CalSTRS, San Diego, CA



**State of California
San Francisco**



Arden Realty, Fountain Valley, CA



**Walton/SCS Advisors,
Fremont, CA**



State of California, Oakland



Emery Station

RealEnergy Developments



Ensemble, Long Beach, CA



KOR, Marina Del Rey, CA



Arden Realty, San Diego, CA



RREEF, Carlsbad, CA



**CommonWealth Partners
Costa Mesa, CA**



**CommonWealth Partners
San Diego, CA**



**Arden Realty – Phase Two
Beverly Hills, CA**



Arden Realty, Long Beach, CA

RealEnergy Developments



Tower Realty
San Francisco, CA



CommonWealth Partners, San Diego, CA



Trammell Crow
Torrance, CA



Fremont Properties
San Francisco, CA



Transwestern
So. California and New Jersey





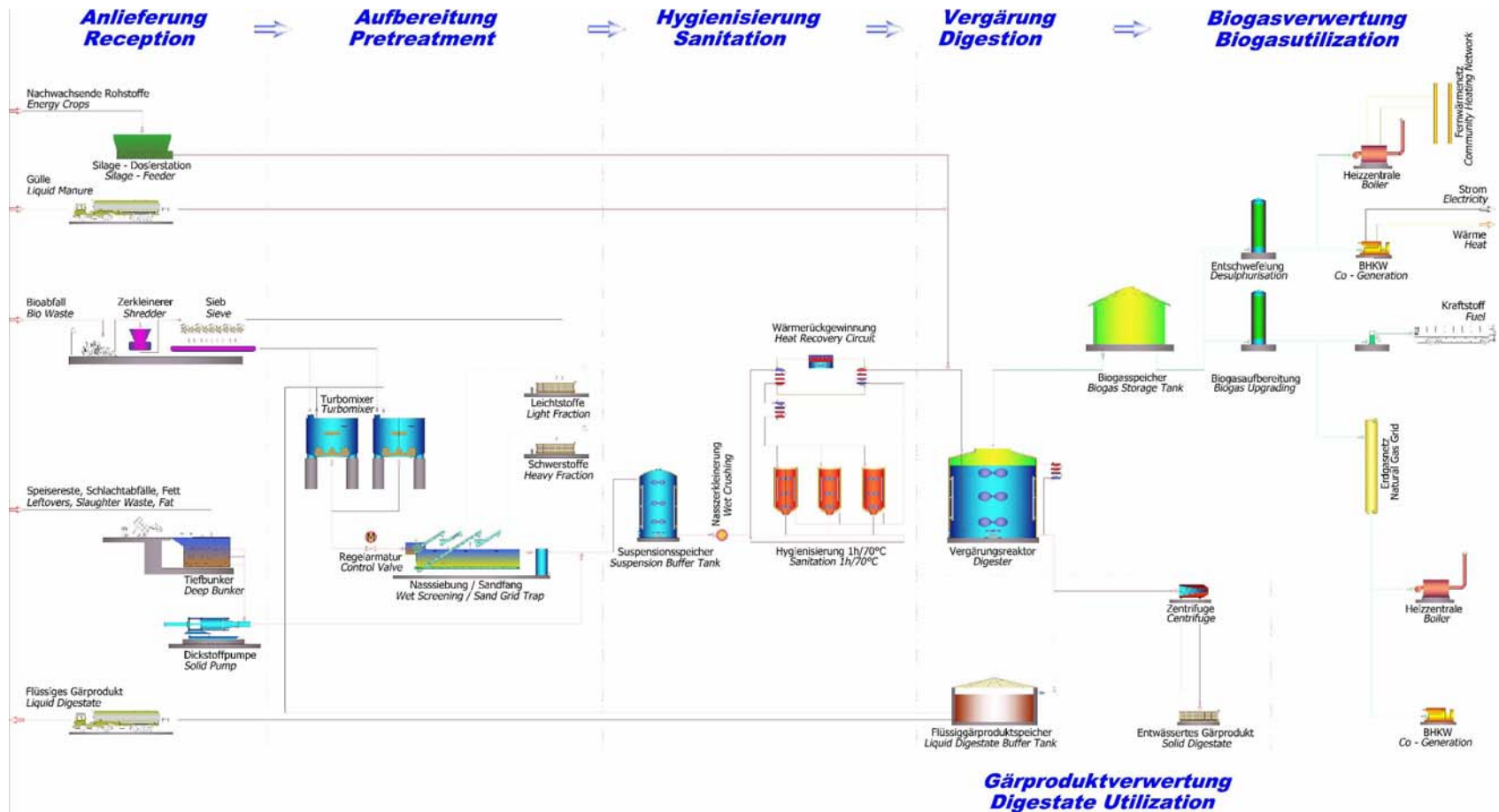
RealEnergy Biogas Plant – Rickreall, LLC

System Owner/Operator:	RealEnergy, LLC
Dairy Size:	2,700 Head
Annual RNG Production:	100 Million Cubic Feet
Imported Waste:	65,000 tons per year
Imported Energy Crops:	1,000 – 600,000 t/y Phase II
Modular System Design:	Complete Mix - Mesophilic Pre-Fabricated Reactors 1.4 MW Biogas Generators





BioGas Plant Modular Design Standards





Biogas Injection Technical Standards

North America ~ 200 Digesters No BioGas Injection Standards
Europe ~ 5000 Digesters, BioGas Injection Standards Since 2001

Many Want Standards for Gas Distribution System Injection

- Northwest Natural Gas
- Southwest Gas
- Pacific Gas & Electric
- Intermountain Gas
- Gas Technology Institute
- American Gas Association
- USCHPA
- NYSEG

No Quality Standards or Monitoring Protocols Yet

- California BioEnergy Napa event triggered Gas Technology Institute to begin creating a specification – 70 gas companies contributing \$1.4m
- European Community Standard as Strawman? Not Accepted!



Regulatory/Technology/ Biogas Injection Roundtables

Napa Valley, CA – April 18 - 20, 2007

- 165 in Regulatory Roundtable
- 46 in Biogas Injection Roundtable
- White Paper - Survey of Regulatory Challenges
- www.cabioenergy.com

California BioEnergy
The Path to Market Transformation

April 18-20, 2007
Napa, California

**Waste-to-Energy and Energy Efficiency
for Farmers and Food Processors**

Sponsored by the Pacific Regional CHP Application Center, the University of California, Davis, the California Energy Commission, and the U.S. Department of Energy.

www.CABioEnergy.com

Program Overview

Wednesday, April 18th 12:00 pm - 5:30 pm
Energy Efficiency on Farms and in Food Processing Plants

Thursday, April 19th 8:00 am - 12:00 pm
BioGas and Energy Generation for Farms and Food Processing

Thursday, April 19th 1:30 pm - 5:30 pm
Hear From The Regulators!

Friday, April 20th 8:30 am - 12:00 pm
Charting a Path to Regulatory Compliance

Friday, April 20th 12:00 pm - 5:00 pm
UC Davis Site Visit and Biogas Tour

This workshop is for:

- Poultry, Swine, and Dairy Farmers
- Food Processors
- Equipment Vendors
- Energy and Bio-fuels Researchers
- Contractors
- Regulators
- Project Designers
- Financiers
- System Packagers

We look forward to your participation!

Sponsored by

Co-Sponsored by







For More Information



Bechtel
Headquarters
San Francisco,
California
1000 kW System

Kevin D. Best - CEO
RealEnergy, LLC
6712 Washington Street
Yountville, California 94599

Phone: 707 944 2400 x109
Fax: 707 944 2470
Cellular: 707 426 3300

kbest@realenergy.com
www.realenergy.com